

PATENT
Docket No. 416272061200
Client Ref. GOBR-200

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CHASE J. TROMBELLA



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

V. CHANDLER et al.

Serial No.: To Be Assigned

Filing Date: Herewith

For: GENETIC FUNCTIONS REQUIRED
FOR GENE SILENCING IN MAIZE

Examiner: To Be Assigned

Group Art Unit: To Be Assigned

INFORMATION DISCLOSURE
STATEMENT UNDER 37 C.F.R. § 1.97

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Pursuant to 37 C.F.R. § 1.97 and § 1.98, Applicants submit for consideration in the above-identified application the documents listed on the attached Form PTO-1449. Copies of the documents are also submitted herewith. The Examiner is requested to make these documents of record.

This Information Disclosure Statement is submitted:

- ☒ **With the application; accordingly, no fee or separate requirements are required.**
- ☐ Within three months of the application filing date or before mailing of a first Office Action on the merits; accordingly, no fee or separate requirements are required.
- ☐ After receipt of a first Office Action on the merits but before mailing of a final Office Action or Notice of Allowance.
 - ☐ A fee is required.
 - ☐ A fee is required. Accordingly, a Fee Transmittal form (PTO/SB/17) is attached to this submission in duplicate.
 - ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below; accordingly, no fee is believed to be due.
- ☐ After mailing of a final Office Action or Notice of Allowance, but before payment of the issue fee. Accordingly, a Petition requesting consideration of the Information Disclosure Statement, an authorization to charge our deposit account, and a Certification under 37 C.F.R. § 1.97(e) are provided herein.

Applicants would appreciate the Examiner initialing and returning the Form PTO-1449, indicating that the information has been considered and made of record herein.

The information contained in this Information Disclosure Statement under 37 C.F.R. § 1.97 is to the best of my knowledge and is not to be construed as a representation that: (i) a complete search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the above information constitutes prior art to the subject invention.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing 416272061200. However, the Assistant Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: October 5, 2001

Respectfully submitted,

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J-986 U.S. PTO
 09/972805
 10-65701

U.S. PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Name	Class	Subclass	Filing Date If Appropriate

FOREIGN PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Country	Class	Subclass	Translation YES NO

OTHER DOCUMENTS

(including author, title, Date, Pertinent Pages, Etc.)

Examiner Initials	Ref. No.	Title
	1. /	Amedeo, P. et al. "Disruption of the plant gene <i>MOM</i> releases transcriptional silencing of methylated genes" <i>Nature</i> 405 (2000): 203-206. /
	2. /	Chandler, V. L. "Paramutation: Allelic Interactions that Cause Heritable Changes in Transcription", <i>Molecular Biology Meeting (Abstract)</i> , Queenstown, New Zealand (August 1998).
	3.	Chandler, V. L. "Epigenetic Control of Gene Expression in Plants", <i>Symposium: Plant Physiology 2000 and Beyond: Breaking the Mold (Abstract #30002)</i> , Providence, Rhode Island (July 23, 2001).
	4.	Chandler, V. L. and K. J. Hardeman. "The <i>Mu</i> Elements of <i>Zea mays</i> " <i>Adv. Genetics</i> 30 (1992): 77-122.
	5.	Chandler, V. L. and H. Vaucheret. "Gene Activation and Gene Silencing" <i>Plant Physiol.</i> 125 (2001): 145-8.
	6.	Chandler, V. L. and V. Walbot. "DNA modification of a maize transposable element correlates with loss of activity" <i>Proc. Natl. Acad. Sci. USA</i> 83 (1986): 1767-71.
	7.	Chandler, V. L. et al. "Paramutation: Allelic Interactions that Cause Heritable Changes in Transcription", <i>Abstracts of papers presented at the EMBO Workshop on "Chromatin and Epigenetic Regulation"</i> , Heidelberg (October 4-7, 1997): 41.
	8.	Chandler, V. L. et al. "Paramutation in maize" <i>Plant Mol. Biol.</i> 43 (2000): 121-145.
	9.	Chandler, V. L. et al. " <i>h</i> and <i>pl</i> Paramutation in Maize: Heritable Transcription States Programmed during Development", <i>Epigenetic Mechanisms of Gene Regulation</i> , V.E.A. Russo et al. eds. (New York: Cold Spring Harbor Laboratory Press) (1996): 280-304.

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EXAMINER: Initial if citation considered, whether or not the citation conforms with MPEP 609. Draw a line through the citation if not in conformance with MPEP 609. If the citation is not in conformance with MPEP 609, the citation is not to be used.

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J996 U.S. PTO
 09/972805
 10/05/01

10.	Chandler, V. L. et al. "Mutants that prevent paramutation also affect other types of epigenetic silencing" <i>46th International NIBB Conference, Genetics & Epigenetics, 1st 100 years</i> : March 6-10, 2001.
11.	Chomet, P. et al. "Identification of a Regulatory Transposon That Controls the <i>Mutator</i> Transposable Element System in Maize" <i>Genetics</i> 129 (1991): 261-70.
12.	Cogoni, C. and G. Macino. "Isolation of quelling-defective (<i>qde</i>) mutants impaired in posttranscriptional transgene-induced gene silencing in <i>Neurospora crassa</i> " <i>Proc. Natl. Acad. Sci. USA</i> 94 (1997): 10233-10238.
13.	Dalmay, T. et al. "An RNA-Dependent RNA Polymerase Gene in <i>Arabidopsis</i> is Required for Posttranscriptional Gene Silencing Mediated by a Transgene but Not by a Virus" <i>Cell</i> 101 (2000): 543-553.
14.	Dalmay, T. et al. "SDE3 encodes an RNA helicase required for post-transcriptional gene silencing in <i>Arabidopsis</i> " <i>EMBO J.</i> 20 (2001): 2069-2077.
15.	Dorweiler, J. E. et al. "Analysis of Paramutation at the <i>b</i> Locus of Maize" <i>39th Annual Maize Genetics Conference Program and Abstracts</i> , Clearwater Beach, FL (March 13-16, 1997): 36.
16.	Dorweiler, J. E. et al. "Mutations that Affect Paramutation and Correlations with Chromatin Structure" <i>40th Annual Maize Genetics Conference Program and Abstracts</i> , Lake Geneva, WI (March 19-22, 1998): 7.
17.	Dorweiler, J. E. et al. " <i>Mediator of Paramutation2</i> is a dominant inhibitor of the establishment of paramutation" <i>42nd Annual Maize Genetics Conference Program and Abstracts</i> , Coure D'Alene, ID (March 16-19, 2000): 97.
18.	Dorweiler, J. E. et al. " <i>mediator of paramutation1</i> Is Required for Establishment and Maintenance of Paramutation at Multiple Maize Loci" <i>Plant Cell</i> 12 (2000): 2101-2118.
19.	Fagard, M. et al. "AGO1, QDE-2, and RDE-1 are related proteins required for post-transcriptional gene silencing in plants, quelling in fungi, and RNA interference in animals" <i>Proc. Natl. Acad. Sci. USA</i> 97 (2000): 11650-11654.
20.	Fagard, M. and H. Vaucheret. "(Trans)Gene Silencing in Plants: How Many Mechanisms?" <i>Annu. Rev. Plant Physiol. Plant Mol. Biol.</i> 51 (2000):167-194.
21.	Finnegan, E. J. et al. "Reduced DNA methylation in <i>Arabidopsis thaliana</i> results in abnormal plant development" <i>Proc. Natl. Acad. Sci. USA</i> 93 (1996): 8449-8454.
22.	Furner, I. J. et al. "Gene Silencing and Homology-Dependent Gene Silencing in <i>Arabidopsis</i> : Genetic Modifiers and DNA Methylation" <i>Genetics</i> 149 (1998): 651-662.
23.	Gibbons, R. J. et al. "Mutations in <i>ATRX</i> , encoding a SWI/SNF-like protein, cause diverse changes in the pattern of DNA methylation" <i>Nat. Genet.</i> 24 (2000): 368-371.
24.	Goff, S. A. et al. "Functional analysis of the transcriptional activator encoded by the maize B gene:

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25.	Goff, S. A. et al. "Transactivation of anthocyanin biosynthetic genes following transfer of <i>B</i> regulatory genes into maize tissues" <i>EMBO J.</i> 9 (1990): 2517-2522.
26.	Henikoff, S. and L. Comai. "Trans-Sensing Effects: The Ups and Downs of Being Together" <i>Cell</i> 93 (1998): 329-332.
27.	Hollick, J. B. "The <i>rmr6</i> locus affects <i>pl</i> paramutation and plant development" <i>41st Annual Maize Genetics Conference Program and Abstracts</i> , Lake Geneva, WI (March 11-14, 1999): 56.
28.	Hollick, J. B. "Genetic components required for paramutation at the <i>pl1</i> locus" <i>43rd Annual Maize Genetics Conference Program and Abstracts</i> , Lake Geneva, WI (March 14-18, 2001): 86.
29.	Hollick, J. B. and V. L. Chandler. "Genetic Factors Required to Maintain Repression of a Paramutagenic Maize <i>pl1</i> Allele" <i>Genetics</i> 157 (2001): 369-378.
30.	Hollick, J. B. and V. L. Chandler. "Epigenetic Allelic States of a Maize Transcriptional Regulatory Locus Exhibit Overdominant Gene Action" <i>Genetics</i> 150 (1998): 891-897.
31.	Hollick, J. B. and V. L. Chandler. "Genetic Factors Affecting Paramutant <i>pl</i> Alleles" <i>39th Annual Maize Genetics Conference Program and Abstracts</i> , Clearwater Beach, FL (March 13-16, 1997): 37.
32.	Hollick, J. B. and V. L. Chandler. "Genetic Requirements for the Heritable Suppression of a Paramutable <i>pl</i> Allele" <i>40th Annual Maize Genetics Conference Program and Abstracts</i> , Lake Geneva, WI (March 19-22, 1998): 7.
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34.	Hollick, J. B. and D. Lisch. "Diverse roles of required to maintain repression (<i>rmr</i>) factors in gene silencing" <i>42nd Annual Maize Genetics Conference Program and Abstracts</i> , Coure D'Alene (March 16-19, 2000): 32.
35.	Hollick, J. B. et al. "Paramutation and related allelic interactions" <i>Trends Genet.</i> 13 (1997): 302-308.
36.	Hollick, J. B. et al. "Paramutation Alters Regulatory Control of the Maize <i>pl</i> Locus" <i>Genetics</i> 154 (2000): 1827-1838.
37.	Hollick, J. B. et al. "Allelic Interactions Heritably Alter the Activity of a Metastable Maize <i>pl</i> Allele" <i>Genetics</i> 141 (1995): 709-719.
38.	Holliday, R. et al. "Gene Silencing in Mammalian Cells", <i>Epigenetic Mechanisms of Gene Regulation</i> , V.E.A. Russo et al. eds. (New York: Cold Spring Harbor Laboratory Press) (1996): 47-59.
39.	Jeddeloh, J.A. et al. "Maintenance of genomic methylation requires a SWI2/SNF2-like protein" <i>Nature Genet.</i> 22 (1999): 94-97.
40.	Jones, L. et al. "RNA-directed transcriptional gene silencing in plants can be inherited independently of the RNA trigger and requires Met1 for maintenance" <i>Curr. Biol.</i> 11 (2001): 747-757.
41.	Jorgensen, R. A. "Cosuppression: Flower Color Pattern in a Metastable Class of <i>Antirrhinum</i> Genes"

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	42.	Kakutani, T. et al. "Developmental abnormalities and epimutations associated with DNA hypomethylation mutations" <i>Proc. Natl. Acad. Sci. USA</i> 93 (1996): 12406-12411.
	43.	Kakutani, T. et al. "Meiotically and Mitotically Stable Inheritance of DNA Hypomethylation Induced by <i>ddm1</i> Mutation of <i>Arabidopsis thaliana</i> " <i>Genetics</i> 151 (1999): 831-838.
	44.	Lisch, D. et al. "Genetic Characterization of the <i>Mutator</i> System in Maize: Behavior and Regulation of <i>Mu</i> Transposons in a Minimal Line" <i>Genetics</i> 139 (1995): 1777-96.
	45.	Lisch, D. et al. "Mutations that Affect Paramutations also Reverse <i>Mu</i> element Methylation" <i>42nd Annual Maize Genetics Conference Program and Abstracts</i> , Coure D'Alene, ID (March 16-19, 2000): 21.
	46.	Lisch, D. and M. Freeling. "Loss of Mutator Activity in a Minimal Line ¹ " <i>Maydica</i> 39 (1994): 289-300.
	47.	Martienssen, R. A. "Epigenetic Silencing of <i>Mu</i> Transposable Elements in Maize", <u>Epigenetic Mechanisms of Gene Regulation</u> , Russo, V.E.A. et al. eds. (New York: Cold Spring Harbor Laboratory Press) (1996): 593-608.
	48.	Matzke, M. A. et al. "Paramutation and transgene silencing: a common response to invasive DNA?" <i>Trends Plant Sci.</i> 1 (1996): 382-388.
	49.	Mittelsten Scheid, O. et al. "Release of epigenetic gene silencing by trans-acting mutations in <i>Arabidopsis</i> " <i>Proc. Natl. Acad. Sci. USA</i> 95 (1998): 632-637.
	50.	Morel, J. B. and H. Vaucheret. "Post-transcriptional gene silencing mutants" <i>Plant Mol. Biol.</i> 43 (2000): 275-284.
	51.	Mourrain, P. et al. " <i>Arabidopsis</i> SGS2 and SGS3 Genes Are Required for Posttranscriptional Gene Silencing and Natural Virus Resistance" <i>Cell</i> 101 (2000): 533-542.
	52.	Patterson, G. I. et al. "Genetic Analysis of <i>B-Peru</i> , a Regulatory Gene in Maize" <i>Genetics</i> 126 (1991): 205-220.
	53.	Patterson, G. I. et al. "Sequences Required for Paramutation of the Maize <i>b</i> Gene Map to a Region Containing the Promoter and Upstream Sequences" <i>Genetics</i> 140 (1995): 1389-1406.
	54.	Patterson, G. I. et al. "Paramutation, an Allelic Interaction, Is Associated With a Stable and Heritable Reduction of Transcription of the Maize <i>b</i> Regulatory Gene" <i>Genetics</i> 135 (1993): 881-894.
	55.	Radicella, J. P. et al. "Allelic diversity of the maize <i>B</i> regulatory gene: different leader and promoter sequences of two <i>B</i> alleles determine distinct tissue specificities of anthocyanin production" <i>Genes & Development</i> 6 (1992): 2152-2164.
	56.	Radicella, J. P. et al. "Cloning and nucleotide sequence of a cDNA encoding <i>B-Peru</i> , a regulatory protein of the anthocyanin pathway in maize" <i>Plant Mol. Biol.</i> 17 (1991): 127-130.
	57.	Selinger, D. A. and V. L. Chandler. " <i>B-Bolivia</i> , an allele of the Maize <i>b1</i> Gene with Variable Expression. Contains a High Copy Retrotransposon-Related Sequence Immediately Upstream" <i>Plant</i>

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	58.	Selinger, D. A. and V. L. Chandler. "Characterization of a tissue-specific gene silencing phenomenon involving <i>B-Bolivia</i> and CaMV 35S/B chimeric transgenes" <i>42nd Annual Maize Genetics Conference Program and Abstracts</i> , Coure D'Alene, ID (March 16-19, 2000): 109.
	59.	Selinger, D. A. et al. "The Maize Regulatory Gene <i>B-Peru</i> Contains a DNA Rearrangement That Specifies Tissue-Specific Expression Through Both Positive and Negative Promoter Elements" <i>Genetics</i> 149 (1998):1125-38.
	60.	Vaucheret, H. and M. Fagard. "Transcriptional gene silencing in plants: targets, inducers and regulators" <i>Trends Genet.</i> 17 (2001): 29-35.
	61.	Vongs, A. et al. " <i>Arabidopsis thaliana</i> DNA Methylation Mutants" <i>Science</i> 260 (1993): 1926-1928.

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